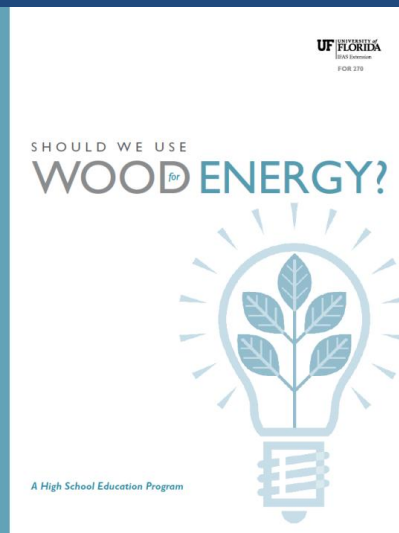
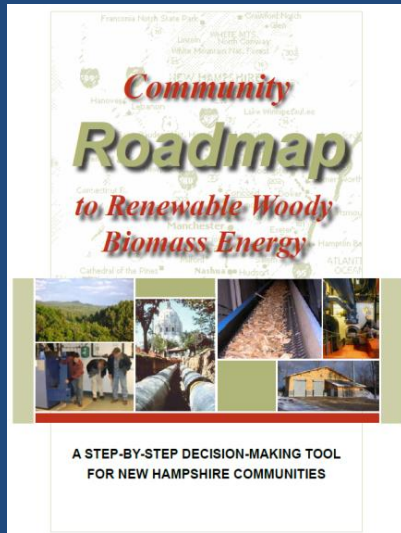


Resources for Educating Communities and Students about Wood Energy



Wood Boiler Systems OVERVIEW



BERC
Renewable • Reliable • Resourceful
Biomass Energy Resource Center

BENEFITS OF USING WOODCHIP HEATING FOR SCHOOLS AND COMMUNITIES

There are many benefits of using biomass in place of fossil fuels like oil and gas for providing heat. The following are some of the important benefits of using woodchips or pellets for heating a school or other institutional building:

Sustainably produced biomass is a local renewable energy source. And, unlike fuel oil, propane, and natural gas, biomass has a history of stable prices unaffected by global economics and political events. Over the last 20 years, the real price of wood energy is actually declining. In Vermont, woodchip prices have increased at less than the rate of general inflation over two decades, unlike oil and gas prices.

Modern institutional biomass systems burn cleanly. These larger scale wood heating systems are significantly cleaner than wood stoves for three reasons. Unlike home woodstoves, institutional woodchip boilers have virtually no visible emissions or odors. Modern woodchip systems emit far less particulate matter (PM), an exhaust product of wood combustion known for its adverse effects on human respiratory health. Over the course of a winter season the heating plant of a 200,000 square foot wood heated school in a cold northern climate produces about the same amount of particulate matter as five home wood stoves.

Burning wood for energy has a positive impact in moderating global climate change. Carbon dioxide (CO₂) buildup in the atmosphere is a significant cause of global climate change. Fossil fuel combustion takes carbon that was locked away underground (as crude oil and gas) and transfers it to the atmosphere as CO₂. When wood is burned, however, it recycles carbon that was already in the natural carbon cycle. Consequently, the net effect of burning wood fuel is that no new CO₂ is added to the atmosphere.

Wood chipped for fuel implies the productive use of a low-grade waste product. Wood fuel typically comes from either small or timber harvesting residues. These residues are generally considered waste or byproducts of the forest industry. Where woodchips come from sawmills, they are a waste that must be disposed of or sold. Where chips come from harvesting operations in the woods, the purpose is to remove low grade trees from the forest that, when done sustainably, will improve overall forest health.

The cost of biomass fuel is generally less than half the cost of fuel oil on a Btu basis. While all of these benefits are important from a public policy perspective, one is probably the most compelling reason for a local school district to decide on woodchip heating. There are similar savings compared to natural gas, particularly when gas prices are high, and higher savings if compared to propane. These hard dollar savings often make the investment in biomass heating technology a win-win for school boards looking to reduce expenditures wherever they can.

The money spent on biomass keeps energy dollars circulating in the local economy and supports jobs in the state's forest products industry.

Printed March 2008
© Copyright 2007 Biomass Energy Resource Center. All rights reserved.

P.O. Box 1611 • Montpelier, Vermont 05601 • ph 802-223-7770 • fax 802-223-7772 • www.biomasscenter.org

